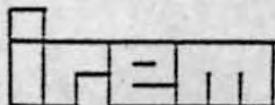


SPARTAN X

MANUAL



IREM CORPORATION

Copyright © 1984, Irem Corp.

"SPARTAN X" DIP SWITCH SETTING

DIP SW #1

OPTION		SW	1	2	3	4	5	6	7	8
DIFFICULTY	EASY	OFF								
	DIFFICULT	ON								
DECREASE OF ENERGY	SLOW		OFF							
	FAST		ON							
NUMBER OF FIGHTERS	2			ON	OFF					
	3			OFF	OFF					
	4			OFF	ON					
	5			ON	ON					
* MODE 2 DIP SW 2's 3 ON	1 COIN	1 PLAY					OFF	OFF		
	2 COINS	1 PLAY					ON	OFF		
	3 COINS	1 PLAY					OFF	ON		
	FREE	PLAY					ON	ON		
	1 COIN	2 PLAYS							OFF	OFF
	1 COIN	3 PLAYS							ON	OFF
	1 COIN	5 PLAYS							OFF	ON
	1 COIN	6 PLAYS							ON	ON
	1 COIN	1 PLAY					OFF	OFF	OFF	OFF
	2 COINS	1 PLAY					ON	OFF	OFF	OFF
** MODE 1 DIP SW 2's 3 OFF	3 COINS	1 PLAY					OFF	ON	OFF	OFF
	4 COINS	1 PLAY					ON	ON	OFF	OFF
	5 COINS	1 PLAY					OFF	OFF	ON	OFF
	6 COINS	1 PLAY					ON	OFF	ON	OFF
	1 COIN	2 PLAYS					OFF	OFF	OFF	ON
	1 COIN	3 PLAYS					ON	OFF	OFF	ON
	1 COIN	4 PLAYS					OFF	ON	OFF	ON
	1 COIN	5 PLAYS					ON	ON	OFF	ON
	1 COIN	6 PLAYS					OFF	OFF	ON	ON
	FREE	PLAY					ON	ON	ON	ON

NOTE: * For a cabinet with a single coin selector or with two coin selectors for the same value coin, Switch 3 of Dip Switch 2 must be OFF.

** For a cabinet with two coin selectors for two different value coins, Switch 3 of Dip Switch 2 must be ON.

DIP SW #2

OPTION		SW	1	2	3	4	5	6	7	8
FLIP PICTURE	NO	OFF								
	YES	ON								
CABINET TYPE	TABLE		OFF							
	UPRIGHT		ON							
COIN MODE SETTING	MODE 1			OFF						
	MODE 2			ON	ALWAYS	ALWAYS				
*FREEZE PICTURE	NO				OFF					
	YES				ON	OFF				
NO DEATH MODE	NO						OFF			
	YES						ON			
TEST MODE	NO							OFF		
	YES							ON		

NOTE: * Press 2-Player start button to freeze picture. Press 1-Player start button to let it move again.

PCB SPECIFICATIONS

POWER SUPPLY:

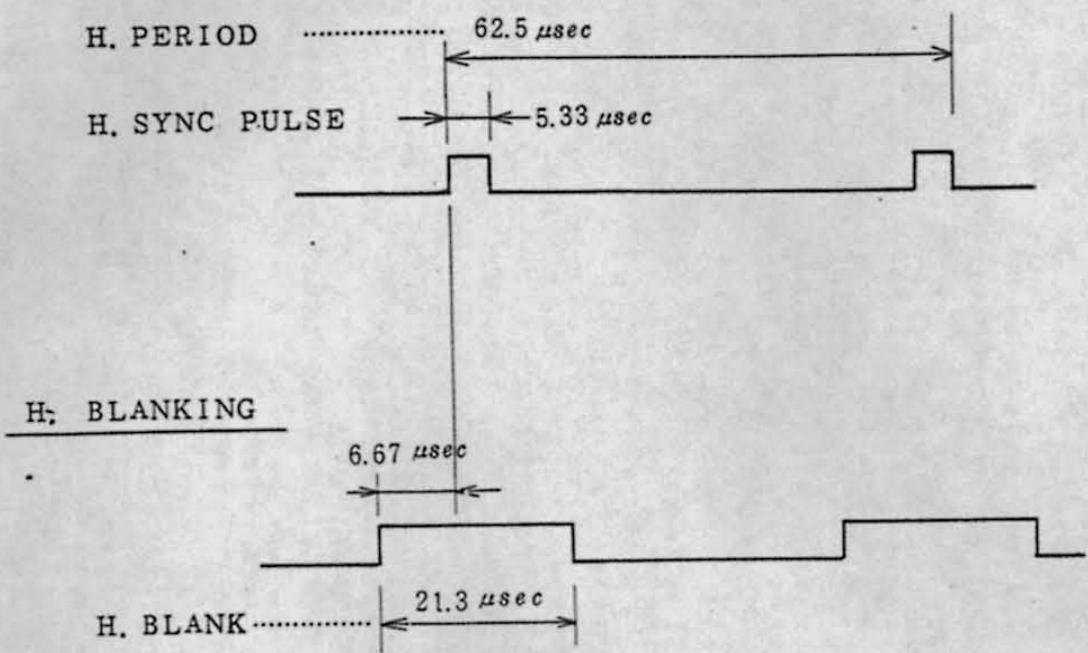
VOLTAGE $5\text{V} \pm 5\%$
 $12\text{V} \pm 10\%$
AMPERE 5V MAX 5A
 12V MAX 1.5A

MONITOR INTERFACE:

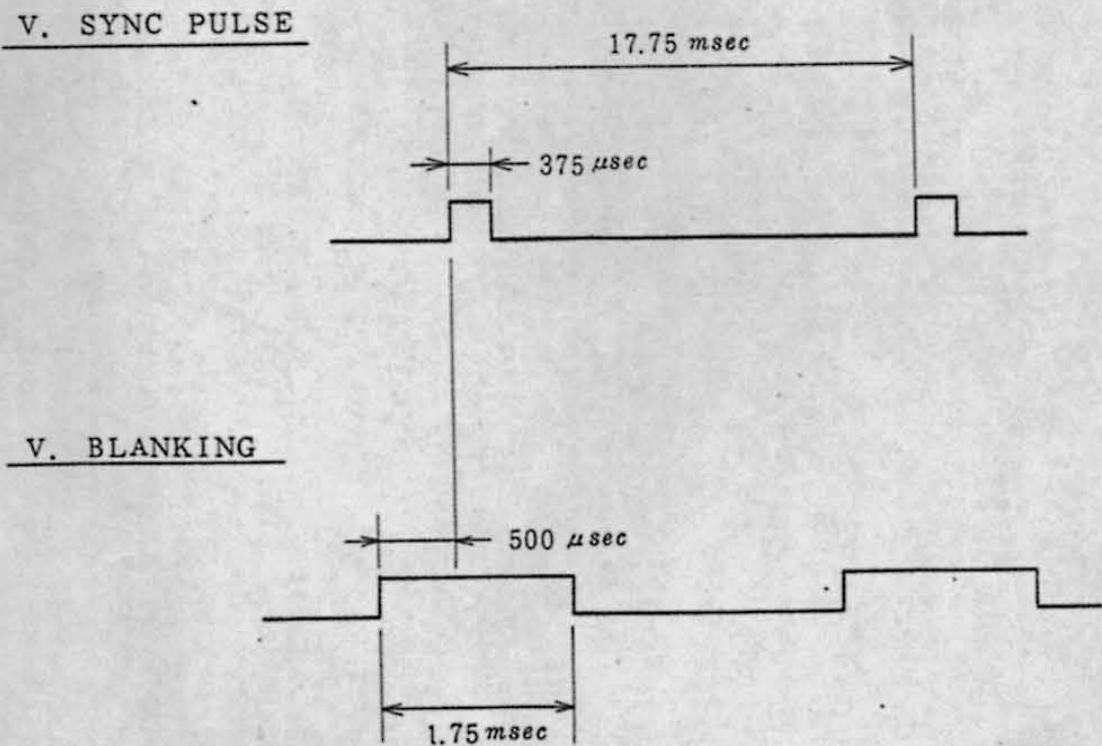
VIDEO SIGNALS.....TTL POSITIVE
SYNC SIGNALS.....TTL NEGATIVE (COMPOSITE SYNC)
HORIZONTAL FREQUENCY 16.0 KHz
H. PERIOD $62.5\text{ }\mu\text{s}$
H. BLANK $21.3\text{ }\mu\text{s}$
H. SYNC PULSE $5.33\text{ }\mu\text{s}$
VERTICAL FREQUENCY 56.3 Hz
V. PERIOD 17.75 ms
V. BLANK 1.75 ms
V. SYNC PULSE $375\text{ }\mu\text{s}$

	OPERATING	STORAGE
TEMPERATURE RANGE	0 to 50°C	-5 to 60°C
RELATIVE HUMIDITY	20 to 70%	NO MORE THAN 80%
VIBRATION RANGE	NO MORE THAN 0.5G	NO MORE THAN 1.0G
TOLERANCE FOR FALLING	NO MORE THAN 0 cm	(Packed) NO MORE THAN 50 cm

HORIZONTAL FREQUENCY 16.0 KHz



VERTICAL FREQUENCY 56.3 Hz



"SPARTAN X" 44 PIN EDGE-CONNECTOR

Unter

Open

GND	4 1	7 2	GND
GND	8 3	2 4	GND
	5 5	6 6	
COIN COUNTER A	0 7	4 8	
1 P LEFT	E 9	5 10	2 P LEFT
1 P RIGHT	F 11	6 12	2 P RIGHT
1 P KICK	H 13	7 14	2 P KICK
2 P START	J 15	8 16	1 P START
	K 17	9 18	COIN COUNTER B
COIN B	L 19	10 20	COMP SYNC
+ 12 V	M 21	11 22	+ 12 V
+ 12 V	N 23	12 24	+ 12 V
SPEAKER (-)	P 25	13 26	SPEAKER (+)
1 P PUNCH	R 27	14 28	2 P PUNCH
RED	S 29	15 30	GREEN
BLUE	T 31	16 32	
2 P UP	U 33	17 34	2 P DOWN
1 P UP	U 35	18 36	1 P DOWN
SERVICE SW	W 37	19 38	COIN A
+ 5 V	X 39	20 40	+ 5 V
+ 5 V	Y 41	21 42	+ 5 V
GND	Z 43	22 44	GND

DIAGNOSTIC MODE TESTS

Diagnostic program is activated by turning switch 8 of Dip switch 2 to the ON position and turning power switch ON. This diagnostic program is composed of 8 independent tests, first two (RAM test and ROM test) of which initiate automatically as power switch is turned ON. After these two tests end, TV monitor displays a list of the next six tests as described below when the 2-Player button is pressed:

- 01 DIP SWITCH
- 02 I-O PORT
- 03 SOUNDS
- 04 CHARACTER
- 05 COLOR
- 06 CROSS HATCH PATTERN

Move the joystick to position the cursor at the desired test and press the 1-Player button to start the test.

To return to test list: Press the 2-Player button (except when 02 I-O PORT test ends). As 02 I-O PORT test ends, move the joystick left (the 1-Player joystick for table type game) while pressing the 2-Player button.

When all the necessary testing is completed, turn power switch OFF and turn switch 8 of Dip switch 2 to the OFF position.

1. RAM TEST

If RAM is OK, "RAM OK" appears on TV monitor.

If RAM is at fault: "RAM NG XXXX YY ZZ"
(Faulty RAM address)(RAM input data)(RAM output data)
appears on TV monitor.

Press the 1-Player button to continue RAM TEST or

Press the 2-Player button to end this test and advance to
ROM TEST.

ROM TEST

If ROMs are OK, the following appears on TV monitor.

RAM	OK
ROM Ø	OK
ROM 1	OK
ROM 2	OK
ROM 3	OK

If any of the ROMs are at fault, for instance, ROM 1, the following appears on TV monitor.

RAM	OK
ROM Ø	OK
ROM 1	NG
ROM 2	OK
ROM 3	OK

START

SET SWITCH 8 OF DIP SWITCH 2
TO "ON"

TURN POWER SWITCH TO "ON"

RAM TEST
OK?

NO

FAULTY RAM
INDICATED ON
TV MONITOR

PUSH 1P BUTTON
TO CONTINUE
RAM TEST

IF RAM OK
APPEARS

OR

PUSH 2P BUTTON TO
ADVANCE TO
ROM TEST

YES

ROM TEST
OK?

NO

REPLACE FAULTY
ROM

PUSH 2P BUTTON

TEST LIST
DISPLAYED ON
TV MONITOR

SELECT TEST BY
OPERATING JOYSTICK

PUSH 1P BUTTON
TO START TEST

01 DIP SWITCH
TEST

02 I-O PORT
TEST

03 SOUND
TEST

04 CHARACTER
TEST

05 COLOR
TEST

06 CROSS HATCH
PATTERN

TEST ENDS?

NO

TURN POWER SWITCH TO "OFF"

SET SWITCH 8 OF DIP SWITCH 2
TO "OFF"

FINISH

3. DIP SWITCH TEST

While TV monitor displays the test list, control the joystick to position the cursor at 01 and press the 1-Player button.

This test shows the state of switches of Dip Switch 1 and 2 and the results of game adjustments.

DIP SW	1	2	3	4	5	6	7	8	
DSW 1	0	0	0	0	0	0	0	0	1 = ON
DSW 2	0	0	0	0	0	0	0	1	0 = OFF

COIN MODE A	1 COIN	1 PLAY
COIN MODE B	1 COIN	2 PLAYS

BODY TYPE	UPRIGHT
DIFFICULTY	EASY
DECREASE	SLOW
FIGHTERS	3

4. I/O PORT TEST

When TV monitor displays the test list, control the joystick to position the cursor at 02 and press the 1-Player button.

This test checks if all the switches on the Control Panel and Coin Doors are working correctly. The following display appears.

INTERFACE 1	1	2	3	4	5	6	7	8	
READ DATA	0	0	0	0	0	0	0	0	
INTERFACE 2	1	2	3	4	5	6	7	8	
READ DATA	0	0	0	0	0	0	0	0	
INTERFACE 3	1	2	3	4	5	6	7	8	1 = ON
READ DATA	0	0	0	0	0	0	0	1	0 = OFF

TIMING n n n n

*TIMING starts at 0000 and adds one count approximately every second.

INTERFACE 1-1 ...	1-Player Start Button
1-2 ...	2-Player Start Button
1-3 ...	Service Switch
1-4 ...	Coin Switch A
INTERFACE 2-1 ...	1P Joystick right
2-2 ...	1P Joystick left
2-3 ...	1P Joystick down
2-4 ...	1P Joystick up
2-6 ...	1P punch button
2-8 ...	1P kick button
INTERFACE 3-1 ...	2P Joystick right
3-2 ...	2P Joystick left
3-3 ...	2P Joystick down
3-4 ...	2P Joystick up
3-5 ...	Coin Switch B
3-6 ...	2P punch button
3-8 ...	2P kick button

To terminate this test and bring the test list back to TV monitor, move the joystick left while depressing the 2-Player button.

5. SOUND TEST

When TV monitor displays the test list, control the joystick to position the cursor at 03 and press the 1-Player button.

A table of sounds appears on TV monitor.

SOUNDS

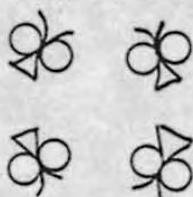
- 01 YELL OF PLAYER (JUMP-KICKS)
CREDIT ADDING SOUND
- 02 YELL OF PLAYER (PUNCHES, KICKS)
- 03 GROAN OF PLAYER OR ENEMY
- 04 LAUGHING VOICE OF ENEMIES-1
- 05 LAUGHING VOICE OF ENEMIES-2
- 06 BURSTING OF PAPER BALL
BURSTING OF DRAGON'S EGG
- 07 SHRIEK OF PLAYER
- 08 PLAYER RUNNING
- 09 HITTING SOUND (PUNCHES, KICKS)
- 10 SWISHING SOUND
- 11 BURSTING OF SNAKE POT
- 12 BITING SOUND
- 13 SOUND OF KNIVES, BOOMERANGS
- 14 COUNTING POINTS
- 15 GAME START
- 16 BGM
- 17 COMPLETION OF EACH PATTERN
- 18 COMPLETION OF GAME
- 19 GAME OVER
- 20 TIME UP WARNING
- 21 ADDITIONAL FIGHTER
MUSIC END

Select a sound by positioning the cursor with the joystick. Depressing the 1-Player button repeats the sound.

6. CHARACTER TEST

When TV monitor displays the test list, control the joystick to position the cursor at 04 and press the 1-Player button.

TV monitor displays four moths which are flipped vertically and horizontally as shown below.



7. COLOR TEST While TV monitor displays the test list, control the joystick to position the cursor at 05 and press the 1-Player button.

This test comprises of five independent checkups. Pressing the 1-Player button brings each checkup to TV monitor.

- (1) A row of letters A through Z appears along with a row of numbers 0 thru 9 as shown below.

ABCDEFGHIJKLMNPQRSTUVWXYZ
0123456789

- (2) BLUE field is displayed.
(3) RED field is displayed.
(4) GREEN field is displayed.
(5) Color pattern appears on TV monitor as shown below.

C Y A N							
B L A C K							
BLACK	RED	GREEN	YELLOW	BLUE	PINK	CYAN	WHITE
W H I T E							

8. CROSS HATCH PATTERN TEST Control the joystick to position the cursor at 06 and press the 1-Player button.

Cross Hatch Pattern is displayed as shown below.

